

CROP PLANNING GUIDE 2011

BLACK SOIL ZONE

FARM MANAGEMENT



Saskatchewan
Ministry of
Agriculture

Black Soil Zone Assumptions – 2011

1. Seed including cleaning:

- Spring wheat 1.5 bu./ac. at \$9.00/bu.
- CPS wheat 1.5 bu./ac. at \$7.00/bu.
- Barley 1.65 bu./ac. at \$5.00/bu.
- Oats 3.0 bu./ac. at \$5.00/bu.
- Canola 5 lb./ac. at \$7.75/lb. treated (herbicide tolerant canola).
- Flax 35 lb./ac. at \$18.75/bu.
- Feed peas 3 bu./ac. at \$6.70/bu.
- Large green lentils 90 lb./ac. at \$0.40/lb.
- Canaryseed 35 lb./ac. at \$0.27/lb.

2. Fertilizer:

- Nitrogen based on 46-0-0 at \$525/tonne (\$.52/lb.)
- Nitrogen on fallow crops 30 lb. N/ac.
- Nitrogen on stubble crops 60 lb. N/ac. except for Canaryseed where 35 lb./ac. is recommended.
- Nitrogen on fallow and stubble lentils and feed peas 6 lb. N/ac. based on 50 lb. of 12-51-0.

Phosphorus based on 12-51-0 at \$700/tonne (\$.53/lb.)

- The following lists the recommended rates of seed placed phosphate: cereals 30 lb./ac., canola 20 lb./ac., flax 15 lb./ac., lentils 20 lb./ac., feed peas 15 lb./ac.

Source: Saskatchewan Ministry of Agriculture.

Sulphur based on 21-0-0-24 at \$400/tonne (\$.30/lb.)

- Sulphur on canola at 20 lb. S/ac. (application cost is included with machinery costs).

3. Pesticides:

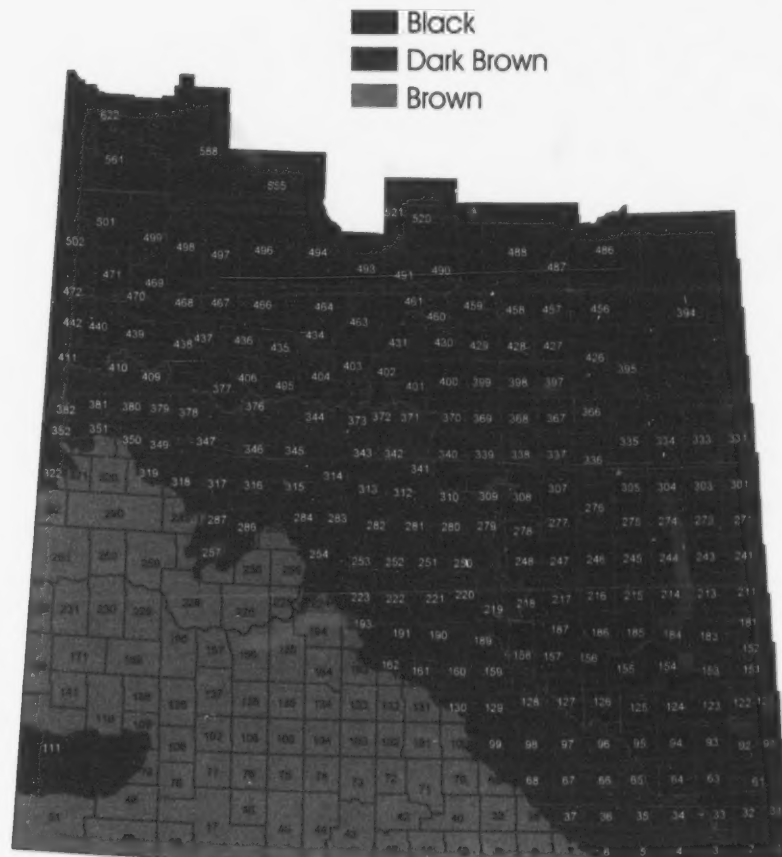
Herbicides:

- Cereals: 50 per cent of acres sprayed for wild oats (except oats) and 100 per cent of acres for broadleaf weeds.
- Flax, lentils, feed peas, canola: 100 per cent of acres treated for grassy weeds and broadleaf.
- Canaryseed: wild oats 50 per cent of acres, 100 per cent of broadleaf acres.
- Direct seeded stubble: pre plant burn-off 100 per cent of acres with glyphosate.
- Cereals, flax, canaryseed: pre/post harvest 25 per cent of all acres with glyphosate.

Insecticides and Others:

- All crops: seed treatment or inoculation 100 per cent of acres except for canary where no seed treatments are used.
- Canary: insect control 20 per cent of acres.
- Canola: insect control 25 per cent of acres/year (25 per cent of \$5/ac. application cost included in custom work).
- Spring wheat, CPS wheat: midge control 40 per cent of acres/year (40 per cent of \$5/ac. application cost included in custom work).
- Lentils: inoculation 100 per cent of acres, desiccation 75 per cent of acres, fungicide 60 per cent of acres, insecticide 20 per cent of acres for grasshoppers.
- Feed peas: inoculation 100 per cent of acres, desiccation 10 per cent of acres, insecticide 10 per cent of acres for pea aphids.

Soil Zones of Saskatchewan



CROP PRODUCTION COSTS MY FARM	USE THIS WORKSHEET TO ADJUST THE CROP BUDGETS TO YOUR FARM COSTS			
CROPS				
REVENUE PER ACRE				
A Estimated yield (bu./ac.; lb./ac.)				
B Estimated on-farm market price per bushel or per pound				
C Estimated Gross Revenue per acre (AxB)				
EXPENSES PER ACRE				
Variable Expenses per acre				
Seed				
Fertilizer: Nitrogen				
Phosphorus				
Sulphur and Other				
Chemical: Herbicides				
Insecticides/Fungicides				
Others				
Machinery Operating: Fuel				
Repair				
Custom Work and Hired Labour				
Crop Insurance Premium				
Utilities and Miscellaneous				
Interest on Variable Expenses				
D Total Variable Expenses per acre				
Other Expenses per acre				
Building Repair				
Property Taxes				
Insurance and Licences				
Machinery Depreciation				
Building Depreciation				
Machinery Investment				
Building Investment				
Land Investment				
E Total Other Expenses				
F Labour and Management*				
G Total Expenses per acre (D+E+F)				
H Summerfallow Expense				
I Total Rotational Expenses (G+H)				
RETURNS PER ACRE				
Return over Variable Expenses (C-D)				
Return over Total Rotation Expenses (C-I)				
BREAK-EVEN YIELD PER ACRE				
(lb./ac. or bu./ac.)**				
To Cover Variable Expenses				
To Cover Total Rotation Expenses				
BREAK-EVEN PRICE				
(per bushel or per pound)**				
To Cover Variable Expenses				
To Cover Total Rotation Expenses				

* These budgets do not include an estimate for owner/operator labour and management. This value varies greatly and depends on both the farm manager's needs as well as the ability of the farm business to generate farm income. Farm managers need to determine their own actual labour and management cost and add it to total expenses.

** Returns per acre, break-even yields and prices for fallow seeded crops must include the previous year's fallow expenses.

2011 CROP ROTATION WORKSHEET

There is value in looking at the effect of rotations on your long term profitability. This tool looks at the net returns per rotation acre. The example shown here is based on estimates from the various Soil Zone guides. The actual costs and returns should be based on your own projections. Show the complete rotation from the first year to the last year.

This worksheet shows both 'returns over total expenses' and 'returns over variable expenses'. Note that in year 1, the summerfallow costs are included in 'canola on fallow'.

Crop Rotation Returns

	Example 1: Black Soil Zone			Rotation 1		Rotation 2		Rotation 3	
	Crop	Return over Total Expenses \$/acre	Return over Variable Expenses \$/acre	Crop	Return \$/acre	Crop	Return \$/acre	Crop	Return \$/acre
Year 1	Canola on Fallow	\$71.74	\$177.28						
Year 2	Spring Wheat Direct-Seeded	\$44.65	\$106.37						
Year 3	Lentil Direct-Seeded	\$143.54	\$205.26						
Year 4	CPS Direct-Seeded	\$59.37	\$121.09						
Year 5	Tillage Fallow								
Year 6									
Total Returns		\$319.30	\$610.00						
Total number years in rotation		5	5						
Return per rotation acre		\$63.86	\$122.00						

CROP PRODUCTION COSTS (\$/ACRE) BLACK SOIL ZONE 2011

- Tillage fallow: 100 per cent of acres sprayed for winter annuals.
 - Chem fallow: one application for winter annuals, two applications for broad spectrum, one application for broadleaf.
- Fuel costs** are based on estimated fuel consumptions for the various farming operations with diesel fuel priced at 87 cents/litre.
 - Machinery repair** rates are 4 per cent of machinery investment per year for peas, lentils and flax and 3 per cent for all other crops.
 - Saskatchewan Crop Insurance Corporation (SCIC)** premiums are based on 70 per cent of the risk area(s) coverage plus 20 per cent.
 - Building repair** rates are 5 per cent of building investment per acre.
 - Operating interest** is calculated on all cash operating costs at 4.75 per cent for 6 months on all crops, 18 months for fallow.
 - Machinery depreciation** is calculated at 10 per cent of machinery investment per year on a straight-line basis.
 - Building depreciation** is based on a building investment of \$33 per cultivated acre calculated at 5 per cent per year on a straight-line basis.
 - Average machinery investment** is \$216 per cultivated acre, \$86 per tillage fallow acre and \$65 per chem fallow acre. An additional machinery investment of \$45 per acre is assumed for lentils and peas.
 - Investment cost** on buildings and machinery investment is calculated at a rate of 3.0 per cent on the investment per acre.
 - Land investment cost** of \$20.03/ac. is calculated at 4.0 per cent return on investment of \$501 per cultivated acre.
 - Crop prices** are based on information obtained as of December 13, 2010.
 - Crop yields** are 120 per cent of long term averages for SCIC risk areas 14, 17 and 22 soil class G based on data compiled by SCIC. Crop yields for the average soil class in the risk area have been increased by 20 per cent to reflect the increased productivity from previous year over the long term averages and the higher than average input levels used in these budgets.
 - Crops** that appear in both the Crop Planning Guides and the Specialty Crops Guide that share the same soil zone and are continuous cropped have their yields averaged between Saskatchewan Ministry of Agriculture's 10 year averages and SCIC yields plus 20 per cent.
 - Labour and management** – These budgets do not include an estimate for owner/operator labour and management. This value varies greatly and farm managers need to determine their own actual labour and management cost.

	Summerfallow		Fallow Seeded Crops									Stubble Seeded Crops								
	Tillage Fallow	Chem Fallow	Spring Wheat	CPS Wheat	Feed Barley	Oats	Large Green Lentil*	Feed Peas	Flax	Canaryseed	Canola	Spring Wheat	CPS Wheat	Feed Barley	Oats	Large Green Lentil	Feed Peas	Flax	Canaryseed	Canola
REVENUE PER ACRE																				
Estimated Yield (bu./ac.,lb./ac.) (A)			39.2	49.2	60.8	77.4	1,140.0	35.5	22.5	1,170.0	33.3	39.2	49.1	60.8	77.4	1,140.0	35.5	22.0	1,145.0	33.3
Estimated On Farm Market Price/bu.,lb. (B)			6.25	5.30	3.40	2.95	0.33	4.35	14.05	0.24	10.85	6.25	5.30	3.40	2.95	0.33	4.35	14.05	0.24	10.85
Estimated Gross Revenue/ac (AxB)=(C)			245.00	260.76	206.72	228.33	376.20	154.43	316.13	280.80	361.31	245.00	260.23	206.72	228.33	376.20	154.43	309.10	274.80	361.31
EXPENSES PER ACRE																				
Variable Expenses/Acre																				
Seed			13.50	10.50	8.25	15.00	36.00	20.10	11.72	9.45	38.75	13.50	10.50	8.25	15.00	36.00	20.10	11.72	9.45	38.75
Fertilizer - Nitrogen			15.60	15.60	15.60	15.60	3.12	3.12	15.60	15.60	15.60	31.20	31.20	31.20	31.20	3.12	3.12	31.20	18.20	31.20
- Phosphorus			15.90	15.90	15.90	15.90	10.60	7.95	7.95	15.90	10.60	15.90	15.90	15.90	15.90	10.60	7.95	7.95	15.90	10.60
- Sulphur and Other			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.00
Chemical - Herbicides	4.39	14.33	19.74	19.74	19.46	9.38	41.58	27.24	17.66	15.85	30.16	22.99	22.99	22.71	12.63	34.50	30.49	20.91	19.10	28.50
- Insecticides/Fungicides	0.00	0.00	2.98	2.98	0.00	0.00	1.49	0.50	0.00	3.78	1.44	2.98	2.98	0.00	0.00	14.80	0.50	0.00	3.78	1.44
- Other	0.00	0.00	2.70	2.70	2.38	3.06	2.70	3.60	2.10	0.00	0.00	2.70	2.70	2.38	3.06	2.70	3.60	2.10	0.00	0.00
Machinery Operating - Fuel	8.70	1.74	14.79	14.79	14.79	14.79	19.14	16.53	16.53	14.79	15.66	12.18	12.18	12.18	12.18	13.92	13.92	13.92	12.18	13.05
- Repair	2.58	1.95	6.18	6.18	6.18	6.18	8.64	8.64	8.24	6.18	6.18	6.48	6.48	6.48	6.48	8.64	8.64	8.64	6.48	6.48
Custom Work and Hired Labour	0.00	0.00	14.50	14.50	12.50	12.50	14.25	11.75	12.50	13.50	12.50	14.50	14.50	12.50	12.50	14.25	11.75	12.50	13.50	12.50
Crop Insurance Premium	0.00	0.00	7.20	10.71	6.81	7.84	22.66	7.83	12.52	12.69	14.64	7.20	10.70	6.81	7.84	22.66	7.83	12.52	12.69	14.64
Utilities and Miscellaneous	5.78	5.78	5.78	5.78	5.78	5.78	5.78	5.78	5.78	5.78	5.78	5.78	5.78	5.78	5.78	5.78	5.78	5.78	5.78	5.78
Interest on Variable Expenses	1.53	1.70	2.82	2.84	2.56	2.52	3.94	2.68	2.63	2.70	3.74	3.22	3.23	2.95	2.91	3.97	2.70	3.02	2.78	4.01
Total Variable Expenses (D)	22.98	25.50	121.69	122.22	110.21	108.55	169.90	115.72	113.23	116.22	161.05	138.63	139.14	127.14	125.48	170.94	116.38	130.26	119.84	172.95
Other Expenses/acre																				
Building Repair	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65
Property Taxes	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67
Insurance and Licences	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65
Machinery Depreciation	8.60	6.50	20.60	20.60	20.60	20.60	21.60	21.60	20.60	20.60	20.60	20.60	20.60	20.60	20.60	21.60	21.60	20.60	20.60	20.60
Building Depreciation	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65
Machinery Investment	2.58	1.95	6.48	6.48	6.48	6.48	6.48	6.48	6.48	6.48	6.48	6.48	6.48	6.48	6.48	6.48	6.48	6.48	6.48	6.48
Building Investment	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Land Investment	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03
Total Other Expenses (E)	44.82	42.09	60.72	60.72	60.72	60.72	61.72	61.72	60.72	60.72	60.72	60.72	60.72	60.72	60.72	61.72	61.72	60.72	60.72	60.72
Labour and Management (F)**																				
Total Expenses (D+E+F)=(G)	67.80	67.59	182.41	182.94	170.93	169.27	231.62	177.44	173.95	176.94	221.77	199.35	199.86	187.86	186.20	232.66	178.10	190.98	180.56	233.67
Summer fallow Expense (H)			67.80	67.80	67.80	67.80	67.80	67.80	67.80	67.80	67.80									
Total Rotation Expense (G+H)=(I)			250.21	250.74	238.73	237.07	299.42	245.24	241.75	244.74	289.57	199.35	199.86	187.86	186.20	232.66	178.10	190.98	180.56	233.67
RETURNS PER ACRE***																				
Return Over Variable Expenses (C-D)			100.33	115.56	73.53	96.80	183.32	15.73	179.92	141.60	177.28	106.37	121.09	79.58	102.85	205.26	38.05	178.84	154.96	188.36
Return Over Total Rotation Expenses (C-I)			-5.21	10.02	-32.01	-8.74	76.78	-90.81	74.38	36.06	71.74	45.65	60.37	18.86	42.13	143.54	-23.67	118.12	94.24	127.64
BREAK-EVEN YIELD PER ACRE ***																				
To Cover Variable Expenses			23.15	27.40	39.17	44.59	584.48	31.89	9.69	580.00	16.96	22.18	26.25	37.39	42.54	518.00	26.75	9.27	499.33	15.94
To Cover Total Rotation Expenses			40.03	47.31	70.21	80.36	907.33	56.38	17.21	1019.75	26.69	31.90	37.71	55.25	63.12	705.03	40.94	13.59	752.33	21.54
BREAK-EVEN PRICE PER BU./LB. ***																				
To Cover Variable Expenses			3.69	2.95	2.19	1.70	0.17	3.91	6.05	0.12	5.53	3.54	2.83	2.09	1.62	0.15	3.28	5.92	0.10	5.19
To Cover Total Rotation Expenses			6.38	5.10	3.93	3.06	0.26	6.91	10.74	0.21	8.70	5.09	4.07	3.09	2.41	0.20	5.02	8.68	0.16	7.02

* It is not recommended to grow Large Green Lentils on summerfallow in the Black soil zone.

** These budgets do not include an estimate for owner/operator labour and management. This value varies greatly and depends on both the farm manager's needs as well as the ability of the farm business to generate income. Farm managers need to determine their own actual labour and management cost and add it to total expenses.

*** Returns per acre, break-even yields and prices for fallow seeded crops must include the previous year's fallow expenses. For simplicity, we used 2010 tillage fallow values.

CROP PLANNING GUIDE 2011

BLACK SOIL ZONE

Each year, the Saskatchewan Ministry of Agriculture assembles Crop Planning Guides to help producers estimate their costs of producing various crops. These estimates do not represent actual provincial average cost of production figures, but are meant to be used as a guide. Farm managers should use their own costs because costs and yields on each farm differ due to the type and amount of equipment, the amount of chemical and fertilizer used and the various agronomic practices used. Blank worksheets are provided for this purpose.

Using the guide

From the revenue perspective, crop prices are farm gate price estimates for 2011 based on the information that was available in December 2010. Producers are asked to use their own judgment and adjust the estimates to reflect their own expectations. Also, it is important to continually adjust these estimates as seeding time approaches.

From the expense side, producers must continually update their figures as the prices of inputs change. This year it appears that fertilizer prices are volatile.

Yields are area averages from Saskatchewan Crop Insurance Corporation (SCIC). It is recommended that producers use their own yield expectations. Crop Insurance premiums are based on 2010 figures.

The figures contained in these guides provide an estimate of variable expenses and other expenses (depreciation and investment cost for machinery, buildings and land) for an average sized farm in each of the soil zones. For 2011, the size of farm used for the black soil zone was 1,169 acres (2006 Census of Agriculture).

For 2011, there will be an increase in the number of acres of fallow to be seeded. When comparing returns per acre of a fallow-seeded crop to a continuous-stubble crop, it is important to add the summer fallow costs to the crop expenses. The best way to compare summer fallow and stubble crops is to calculate the average returns per rotation acre for different rotations of crops. Refer to the example in this guide.

Agronomic Considerations

2011 may pose some production risks including fertility issues and disease problems. Producers should make all attempts to minimize risk including soil testing, seed testing (for germination, vigour and disease) and selecting crops and varieties of crops that will reduce disease problems.

Please contact your nearest Regional Specialist for the latest information on topics including crops and livestock, nutrient management, and the economic implications of management decisions.

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